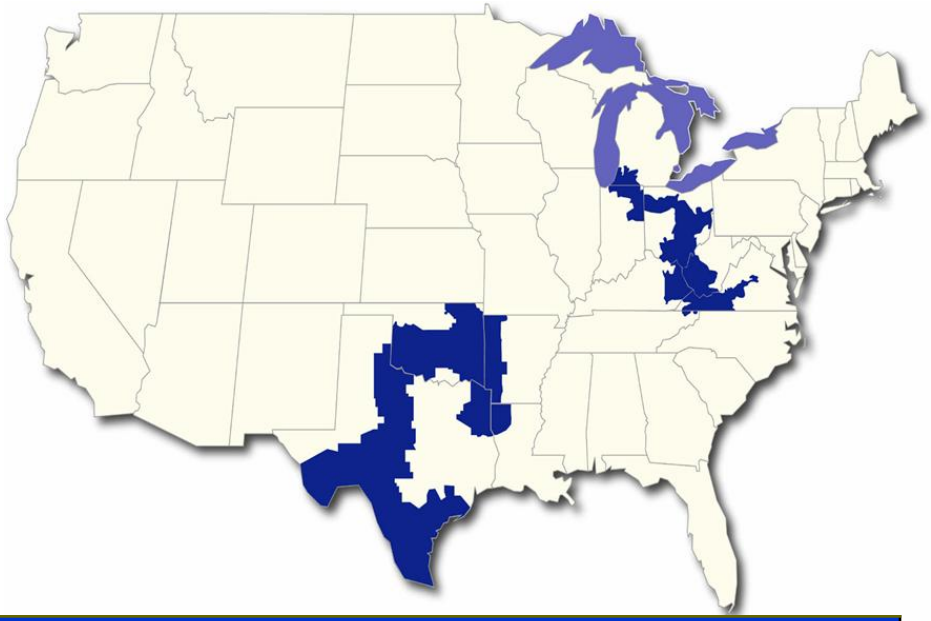
Mountaineer Commercial Scale CO_2 Capture and Storage Project

September 16, 2010

AEP Overview

- 5.2 million customers in 11 states
- Industry leading size and scale of assets:
  - #2 Domestic generation with 38,000 MW
  - #1 Transmission with 39,000 miles
  - #1 Distribution with 216,000 miles
- Coal & transportation assets
  - Over 8,400 railcars involved in operations
  - Own/lease and operate over 2,650 barges & 52 towboats
  - Coal handling terminal with 20 million tons of capacity
  - Consume 76 million tons of coal per year
- 18,900 employees



AEP Generation Capacity Portfolio			
Coal/ Lignite	Gas/ Oil	Nuclear	Other - (hydro, wind, etc.)
69%	20%	6%	5%

MT CCS II Project Overview

- Purpose: Advance the development of the Chilled Ammonia CO_2 Capture technology and demonstrate CO_2 storage and monitoring technology at commercial scale

- Location: Mountaineer Power Plant and other AEP owned properties near New Haven, WV

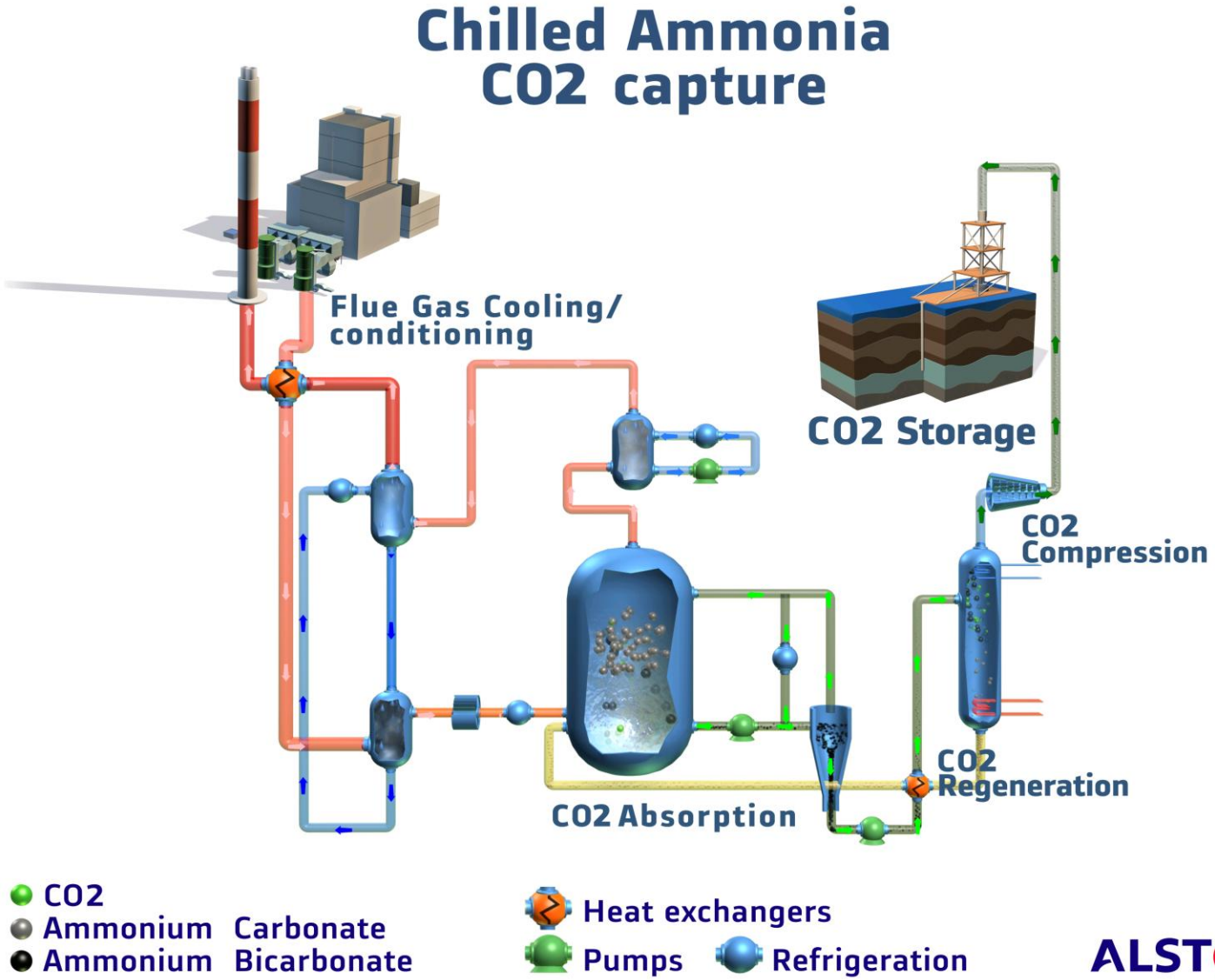
- Preliminary cost estimate: $668 million
  - 50/50 DOE cost share up to $334M

- Project Objectives
  - 90% CO_2 removal from the stack gas
  - Minimize the increase in cost of electricity to $\leq$ 35%
  - Store 1.5 million metric tons of CO_2/year
  - Demonstrate commercial scale technology

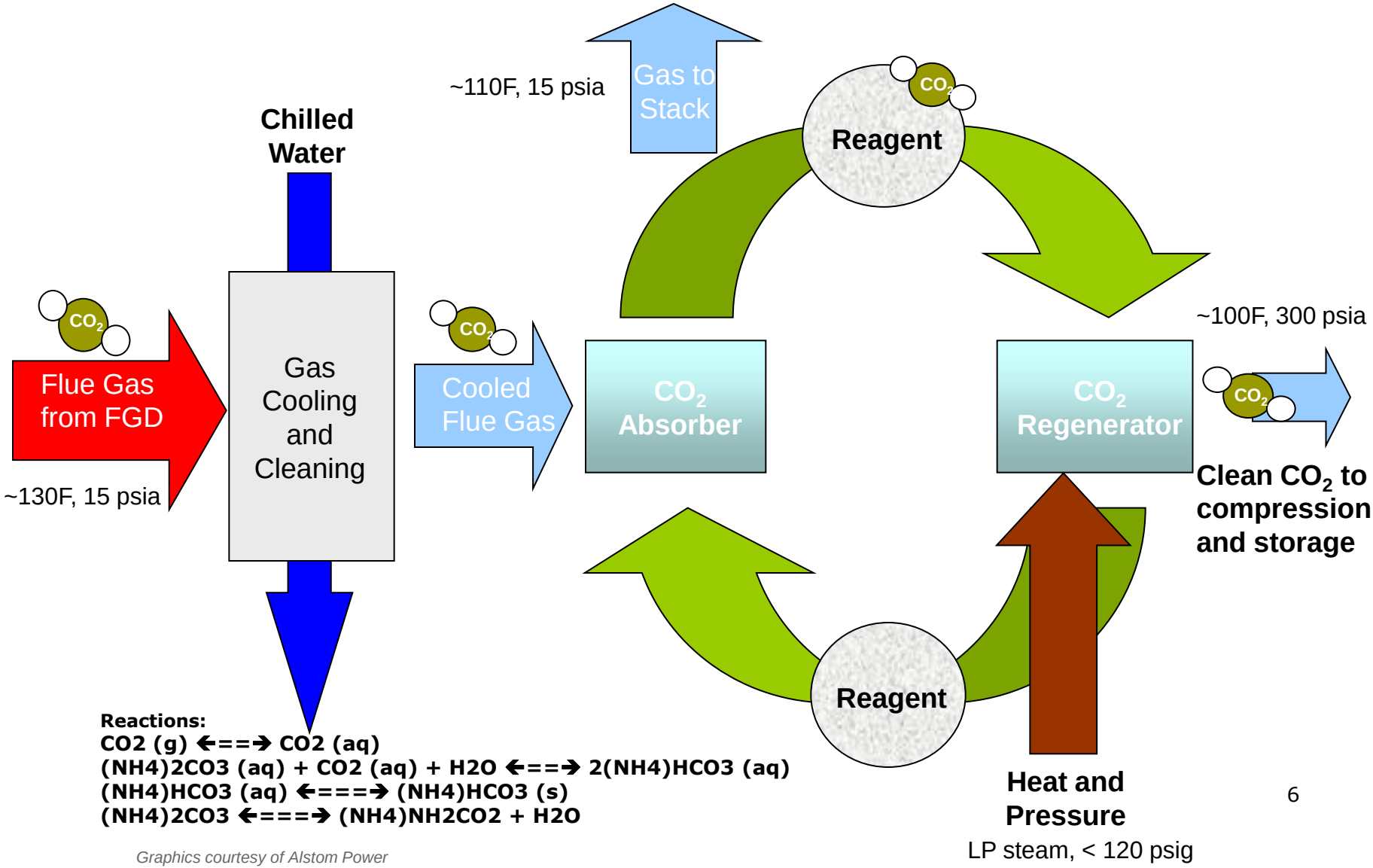
Schedule and Phase I Critical Activities

- Schedule
  - Phase 1 Project Definition: present – 6/30/11
  - Phase 2 Design and Permitting: 7/1/11 – 12/31/12
  - Phase 3 Construction & Startup: 1/1/13 – 8/31/15
  - Phase 4 Operations: 9/1/15 and beyond
- Phase 1 Critical Activities
  - National Environmental Policy Act process
  - Geologic study of proposed injection sites
  - Complete initial engineering & design
  - Detailed cost estimate
- Project Participants
  - AEP
  - DOE
  - Alstom
  - Battelle
  - WorleyParsons
  - Potomac Hudson
  - Geologic Experts Advisory Team

Layout of Alstom's Chilled Ammonia Process



Alstom's Chilled Ammonia Process (CAP)



Reactions:

CO2 (g) ←==→ CO2 (aq)

(NH4)2CO3 (aq) + CO2 (aq) + H2O ←==→ 2(NH4)HCO3 (aq)

(NH4)HCO3 (aq) ←===→ (NH4)HCO3 (s)

(NH4)2CO3 ←===→ (NH4)NH2CO2 + H2O

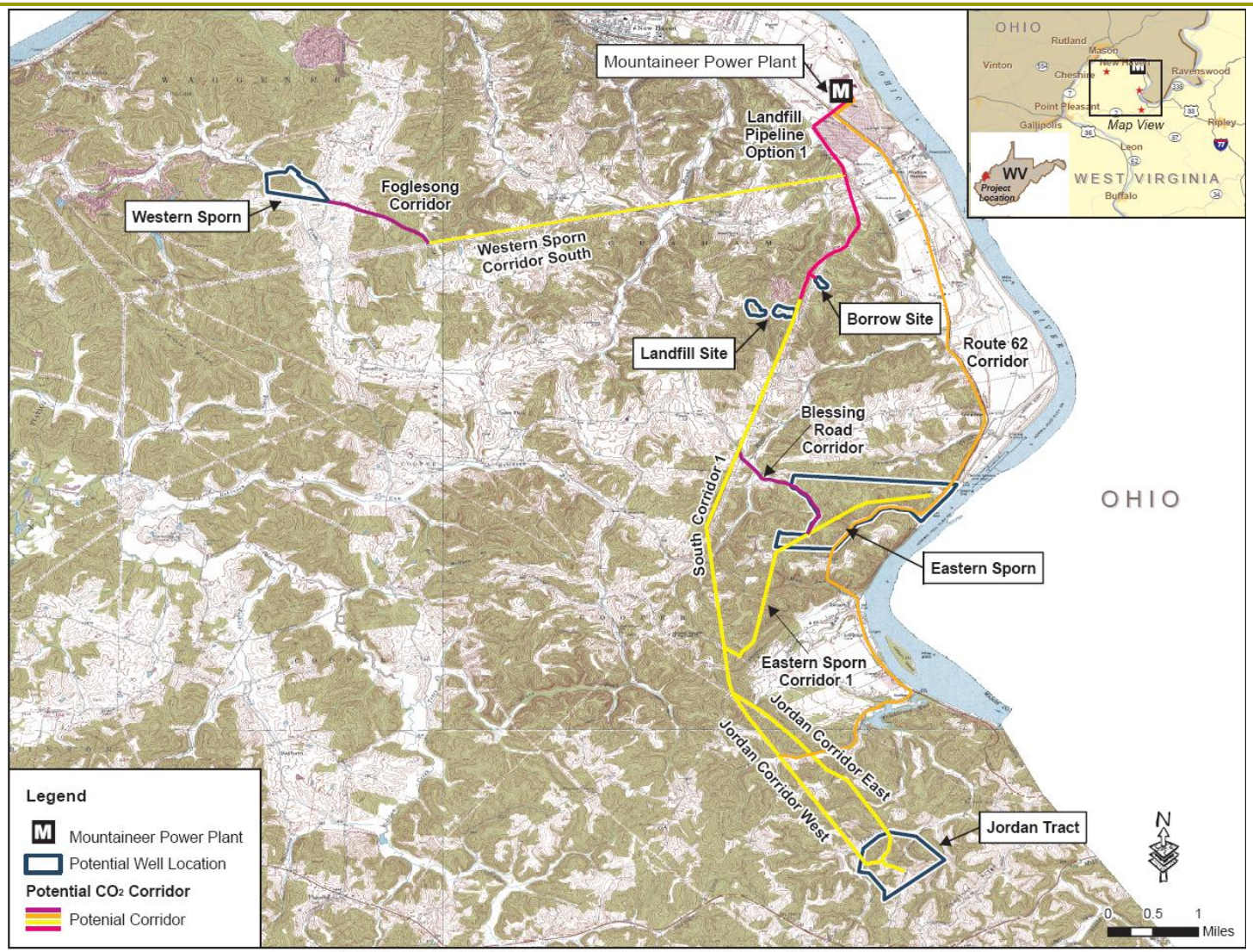
Graphics courtesy of Alstom Power

CAP Advantages and Challenges

- CAP Advantages
  - Lower energy demand than traditional CO_2 capture technologies (including compression)
  - Reagent supply availability
  - More tolerable of trace flue gas contaminants

- CAP Challenges
  - Minimize energy demand
  - Minimize foot print
  - Simplify operations complexity

CO_2 Transport & Storage

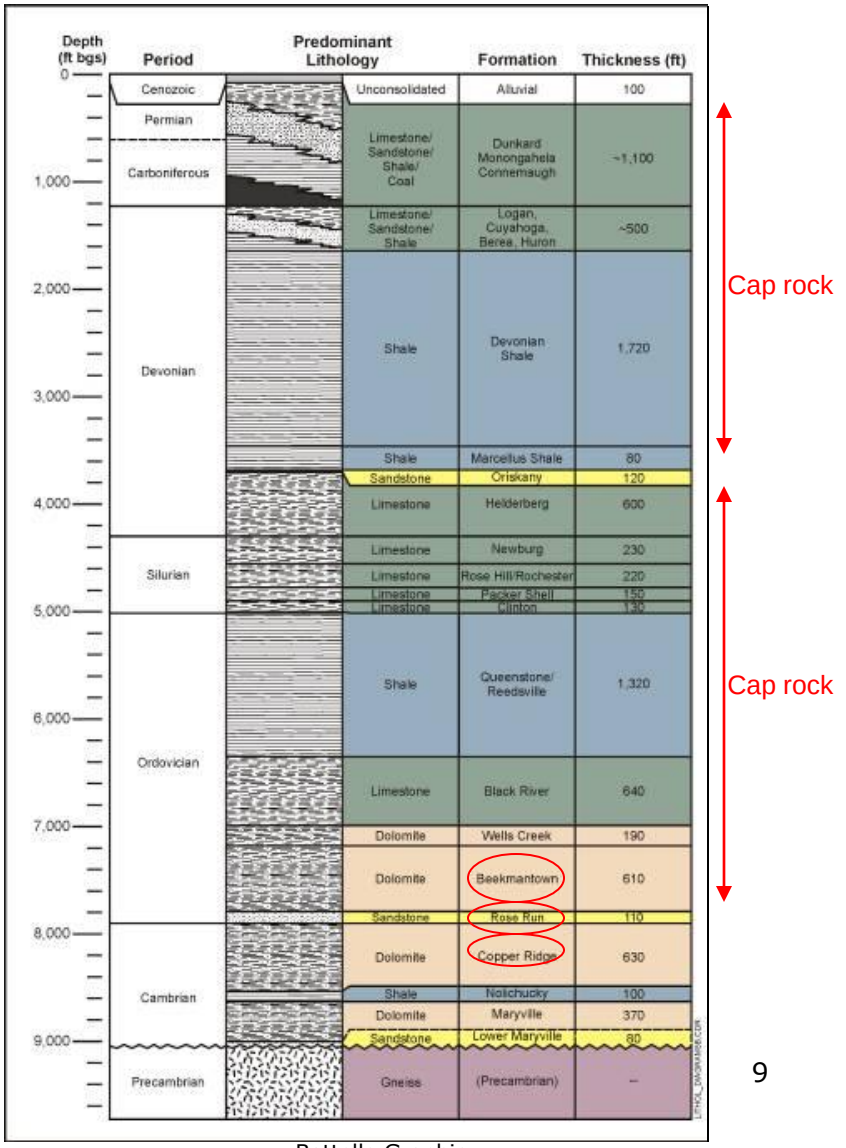


Mountaineer Power Plant and Potential Well Locations and Corridors Topographic Map
USGS 1:24,000 Topographic Quadrangles: Cheshire (38082-H1), Mount Alto (38081-G8), and New Haven (38081-H8)

Local Geology

- 2003 site characterization study funded by the DOE identified two feasible injection reservoirs with several thousand feet of excellent cap rock
  - Rose Run Sandstone
  - Copper Ridge B-Zone

- Test project validating CO_2 model



Battelle Graphic

CO_2 Transport and Storage Challenges

- Advantages
  - Appears to be the only commercially viable option in this area
- Challenges
  - UIC Permit guidelines
    - Materials of construction
    - Monitoring requirements
  - Public acceptance
    - Mineral rights ownership
    - Pipeline Right of Way
    - Overcome Not in my back yard (NIMBY)
  - CO_2 long term liability

Project Status

- Project status as of September 3, 2010
  - Finalized DOE Cooperative Agreement and conditions on award
  - All major contracts in place
  - Selected site location
  - Completed NEPA public scoping period and field studies
  - Developing draft Environmental Impact Statement
  - Completed reagent and refrigerant selection studies
  - Completed initial design basis, mass balance, and PFDs

Future Plans

- Phase I:
  - Complete Phase I activities
  - Evaluate effect of pending Class VI UIC guidelines
- Operate 235MW facility starting in 2015
- Evaluate future CO_2 regulations and regulatory climate
- Plan for retrofitting 100% of Mountaineer flue gas stream w/ CCS
- Evaluate CO_2 storage options across fleet including deep saline and EOR